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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/519,072

**Applicant(s)**

OIEN ET AL.

**Examiner**

NATASHA YOUNG

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05/13/2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-44 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 25-37 and 39-44 is/are rejected.  
7) ☒ Claim(s) 38 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CD/CD)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25-35, 40-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fareid et al (WO 91/08982 A1) in view of Foy et al (WO 03/000400 A1) and Bosquain et al (US 5,882,385).

Regarding claim 25, Fareid et al discloses a support system for catalyst gauzes in an ammonia oxidation burner (1), comprising: ceramic fillings (7) arranged so as to support the catalyst gauzes (3), the ceramic fillings being contained in a burner basket (6) having metal walls and a perforated bottom plate (see Abstract; page 7, lines 1-35; and figures 1-2).

Fareid et al does not disclose a wave breaker arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls.

Foy et al discloses a perforate member (21) having orifices (22) which is supported by a lug (23) attached to bed support (24) having a wave breaker (deflector, 26) being fixed to the heat-shield, which contains the catalyst particles (20) at the edge of the bed (see figure 2 and page 4, line 19 through page 5, line 3) to deflect process fluid fed away from the edge region.

Foy et al does not disclose a wave breaker arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector

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appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wavebreaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that a wave breaker is arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls to direct the flow or gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claims 26-27 depend on claim 25 such that the reasoning used to reject claim 25 will be used to reject the dependent portions of the claims.

Regarding claim 26, Fareid et al discloses a support system wherein the wave breaker is filled with the at least one of ceramic fillings, Raschig rings, ceramic rings, ceramic catalyst materials and particulate ceramic material, so as to obtain a same flow resistance as the ceramic fillings in the burner basket (see page 7, lines 1-25).

Regarding claim 27, Fareid et al does not disclose a support system wherein the wave breaker is a triangular shaped ridge.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector forms a triangle with the shell and transverse baffle.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the wave breaker is a triangular shaped ridge to direct the flow or gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 28 depends on claim 27 such that the reasoning used to reject claim 27 will be used to reject the dependent portions of the claim.

Regarding claim 28, Fareid et al does not disclose a support system wherein the ridge is made of segments.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector forms a triangle with the shell and transverse baffle.

Bosquain et al does not disclose that the ridge is made of segments.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ridge segmented, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art (see MPEP 2144.04 (V-C)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the wave breaker is a triangular shaped ridge to direct the flow or gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 29 depends on claim 28 such that the reasoning used to reject claim 28 will be used to reject the dependent portions of the claim.

Regarding claim 29, Fareid et al does not disclose a support system wherein the segments of the ridge have end walls.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector form a triangle with the shell and transverse baffle.

Bosquain et al does not disclose that the ridge is made of segments and the segments have end walls.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ridge segmented, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art (see MPEP 2144.04 (V-C)).

It would have been an obvious matter of design choice to have segments having end walls, since applicant has not disclosed that segments having end walls solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with segments having end walls.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the segments of the ridge have end walls to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 30 depends on claim 25 such that the reasoning used to reject claim 25 will be used to reject the dependent portions of the claim.

Regarding claim 30, Fareid et al does not disclose a support system wherein the wave breaker is a smooth or perforated sheet arranged at an angle of 10-60° relative to an adjacent one of the walls.

Foy et al discloses a wavebreaker (deflector) at an angle of 10-45 degrees to the angle of fluid flow through the bulk of the bed (see page 5, lines 4-12), which would be 45-80 degrees relative to an adjacent one of the walls.



Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wavebreaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the wave breaker is a smooth or perforated sheet arranged at an angle of 10-60° relative to an adjacent one of the walls to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 31 depends on claim 30 such that the reasoning used to reject claim 30 will be used to reject the dependent portions of the claim.

Regarding claim 31, Fareid et al does not disclose a support system wherein the angle is 25-35°.

Foy et al discloses a wavebreaker (deflector) at an angle of 10-45 degrees to the angle of fluid flow through the bulk of the bed (see page 5, lines 4-12), which would be 45-80 degrees relative to an adjacent one of the walls.

When there is a design need or market pressure to solve a problem (directing fluid flow) and there are a finite number of identified, predictable solution (the angle of the wavebreaker relative to an adjacent one of the walls is 25-35 degrees), a person of ordinary skill has good reason to pursue the known options (the angle is below 45 degrees) within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wavebreaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the wave breaker is a smooth or perforated sheet arranged at an angle of 10-60° relative to an adjacent one of the walls to direct the flow

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or gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 32 depends on claim 31 such that the reasoning used to reject claim 31 will be used to reject the dependent portions of the claim.

Claim 34 depends on claim 30 such that the reasoning used to reject claim 30 will be used to reject the dependent portions of the claim.

Regarding claims 32 and 34, Fareid et al does not disclose a support system wherein the sheet is made of segments.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector forms a triangle with the shell and transverse baffle.

Bosquain et al does not disclose that the ridge is made of segments.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ridge segmented, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art (see MPEP 2144.04 (V-C)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the sheet is made of segments to direct the flow or gas

or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 33 depends on claim 32 such that the reasoning used to reject claim 32 will be used to reject the dependent portions of the claim.

Claim 35 depends on claim 34 such that the reasoning used to reject claim 34 will be used to reject the dependent portions of the claim.

Regarding claims 33 and 35, Fareid et al does not disclose a support system wherein the segments of the sheet have end walls.

Bosquain et al discloses a wavebreaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector forms a triangle with the shell and transverse baffle.

Bosquain et al does not disclose that the ridge is made of segments and the segments have end walls.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the ridge segmented, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art (see MPEP 2144.04 (V-C)).

It would have been an obvious matter of design choice to have segments having end walls, since applicant has not disclosed that segments having end walls solves any

stated problem or is for any particular purpose and it appears that the invention would perform equally well with segments having end walls.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the segments of the sheet have end walls to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 40 depends on claim 25 such that the reasoning used to reject claim 25 will be used to reject the dependent portions of the claim.

Regarding claim 40, Fareid et al discloses a support system wherein the catalyst gauzes include support screens (see page 7, lines 1-12).

Regarding claim 40, Fareid et al discloses a method of reducing movement of ceramic material and avoiding tearing of catalyst gauzes in an ammonia oxidation burner, the method comprising: supporting the catalyst gauzes with ceramic fillings contained in a burner basket having metal walls and a perforated bottom plate (see Abstract and page 7, lines 1-35).

Fareid et al does not disclose arranging a wave breaker in the ceramic fillings and fixing the wave breaker to at least one of an outer periphery of the bottom plate and one of the metal walls of the burner basket.

Foy et al discloses a perforate member (21) having orifices (22) which is supported by a lug (23) attached to bed support (24) having a wave breaker (deflector,

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26) being fixed to the heat-shield, which contains the catalyst particles (20) at the edge of the bed (see figure 2 and page 4, line 19 through page 5, line 3) to deflect process fluid fed away from the edge region.

Foy et al does not disclose a wave breaker arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls.

Bosquain et al discloses a wave breaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wave breaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that a wave breaker is arranged in the ceramic fillings and the wave breaker is fixed to at least one of an outer periphery of the bottom plate and one of the metal walls of the burner basket to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid to formation of a cavity with a free slope

in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claims 42 and 44 depend on claim 41 such that the reasoning used to reject claim 41 will be used to reject the dependent portions of the claims.

Regarding claim 42, Fareid et al does not disclose a method wherein the wave breaker is one of a triangular shaped ridge, a smooth sheet, a perforated sheet and a honeycomb structure.

Bosquain et al discloses a wave breaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45) such that the deflector forms a triangle with the shell and transverse baffle.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al and Bosquain et al such that the wave breaker is a triangular shaped ridge to direct the flow or gas or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Regarding claim 44, Fareid et al discloses a method wherein the catalyst gauzes include support screens (see Abstract).

Claims 36-37, 39, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fareid et al (WO 91/08982 A1), Foy et al (WO 03/000400 A1), and

Bosquain et al (US 5,882,385) as applied to claims 25 and 41 above, and further in view of Ward et al (WO 98/28073).

Claim 36 depend on claim 25 such that the reasoning used to reject claim 25 will be used to reject the dependent portions of the claim.

Regarding claim 36, Fareid et al does not disclose a support system wherein the wave breaker is a honeycomb structure.

Foy et al discloses a perforate member (21) having orifices (22) which is supported by a lug (23) attached to bed support (24) having a wave breaker (deflector, 26) being fixed to the heat-shield, which contains the catalyst particles (20) at the edge of the bed (see figure 2 and page 4, line 19 through page 5, line 3) to deflect process fluid fed away from the edge region.

Foy et al does not disclose a wave breaker arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls and that the deflector, or wave breaker, is a honeycomb.

Ward et al discloses a monolithic support in the form of a honey comb or foam of a ceramic or metal material and the monolithic structures may be used with their passages oriented at preset angles to the gas flow direction (see page 5, lines 22-28) such that the monolithic structure acts as a deflector (or wave breaker).

Bosquain et al discloses a wave breaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).



It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wave breaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al, Ward et al, and Bosquain et al such that the wave breaker is a honeycomb structure to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 37 depend on claim 36 such that the reasoning used to reject claim 36 will be used to reject the dependent portions of the claim.

Regarding claim 37, Fareid et al does not disclose a support system wherein the honeycomb structure has a sloping top.

Foy et al discloses a perforate member (21) having orifices (22) which is supported by a lug (23) attached to bed support (24) having a wave breaker (deflector, 26) being fixed to the heat-shield, which contains the catalyst particles (20) at the edge of the bed (see figure 2 and page 4, line 19 through page 5, line 3) to deflect process fluid fed away from the edge region.

Foy et al does not disclose a wave breaker arranged in the ceramic fillings, the wave breaker being fixed to at least one of an outer periphery of the bottom plate and one of the metal walls and that the deflector, or wave breaker, is a honeycomb.

Ward et al discloses a monolithic support in the form of a honey comb or foam of a ceramic or metal material and the monolithic structures may be used with their passages oriented at preset angles to the gas flow direction (see page 5, lines 22-28) such that the monolithic structure acts as a deflector (or wave breaker).

Bosquain et al discloses a wave breaker (deflector) that is attached to the shell (3) and the deflecting surface may be finished with a baffle in order, and the deflector appears to be in contacting with the transverse baffle (30) (see figure 1 and column 1, line 65 through column 2, line 45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the wave breaker (deflector) fixed to at least an outer periphery of the transverse baffle, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04 (V-B)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Foy et al, Ward et al, and Bosquain et al such that the wave breaker is a honeycomb structure with a sloping top to direct the flow of gas or liquid away from the edge (see Foy et al Abstract) and to avoid the formation of a cavity with a free slope in the particulate

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material under the said surface (see Bosquain et al column 1, line 65 through column 2, line 25).

Claim 39 depend on claim 25 such that the reasoning used to reject claim 25 will be used to reject the dependent portions of the claim.

Regarding claim 39, Fareid et al does not disclose a support system wherein the ceramic fillings include a ceramic catalyst.

Ward et al discloses an oxidation catalyst comprising a primary support in the form of a mesh, gauze pad, monolith, or foam of a ceramic material and a secondary support in the form of an alkali-free alumina or lanthana wash coat on the primary support (see page 5. lines 29-37) such that the ceramic fillings include a ceramic catalyst.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Ward et al such that the ceramic fillings include a ceramic catalyst for the predictable result of increased reactivity.

Claim 43 depend on claim 41 such that the reasoning used to reject claim 41 will be used to reject the dependent portions of the claim.

Regarding claim 43, Fareid et al does not disclose a method wherein the ceramic fillings include a ceramic catalyst.

Ward et al discloses an oxidation catalyst comprising a primary support in the form of a mesh, gauze pad, monolith, or foam of a ceramic material and a secondary support in the form of an alkali-free alumina or lanthana wash coat on the primary

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support (see page 5, lines 29-37) such that the ceramic fillings include a ceramic catalyst.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Fareid et al with the teachings of Ward et al such that the ceramic fillings include a ceramic catalyst for the predictable result of increased reactivity.

***Allowable Subject Matter***

Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Fareid et al discloses a catalyst pack support being supported by a structure placed in a basket (see Abstract) and Rashig rings can be installed (see page 7, lines 1-12) such that the basket contains ceramic fillings.

Fareid et al does not disclose a wave breaker.

Foy et al discloses a deflector, or wave breaker, (16, 26, 36) which is attached to a vessel wall (15), a heat-shield (25) or a bed support (34) such that the a portion of the deflector is always above the catalyst bed such that Foy et al does not disclose or suggest the wave breaker (or deflector) is arranged so as to be completely covered by the ceramic fillings.

***Response to Arguments***

Applicant's arguments, see Remarks, filed May 13, 2008, with respect to objections to the specification claim 18 have been fully considered and are persuasive. The objections of the specification and claim 18 have been withdrawn.

Applicant's arguments, see Remarks, filed May 13, 2008, with respect to 35 U.S.C. 112 rejection of claim 13 have been fully considered and are persuasive. The rejection of claim 13 has been withdrawn.

Applicant's arguments with respect to claims 12-24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is (571)270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797